COAL LAB 6

Task#1

```
INCLUDE Irvine32.inc
.data
Val DWORD ?
space BYTE " ",0
myStr BYTE "Genrate list of 20 Random numbers from 0 to 990",0dh, 0ah
.code
main PROC
mov edx, offset myStr
 call writeString
mov edx, offset space
 mov ebx, 1
mov ecx, 20

  L:
      mov eax, +991
      call RandomRange
      call writeDEC
      mov eax, 5


      call Delay
      call crlf
      mov Val, ecx
      mov ecx, ebx
       L1:
          call writestring
      Loop L1
      add ebx, 1
      mov ecx, Val
Loop L
exit
main ENDP
 END main
```

Output

```
Genrate list of 20 Random numbers from 0 to 990
604
 792
  135
   736
    696
     932
      526
       158
        165
         598
          350
           863
            805
             114
              813
               403
                281
                 713
                  226
                   594
                    Press any key to continue . . .
```

```
INCLUDE Irvine32.inc
.data
x   \&RD *
y   \&RD *
.code
main PROC
mov ecx, 100
L1:
call getlaxxy
  MOV ¥, @¥
  mov y, dx

movzx eax,
call RandomRange

mov dh, al

movzx eax, y
call RandomRange
  mov dl, al
  mov eax, '''

call Gotoxy
  call tvriteChar

mov eax, 100
  call Delay

Loop L1
  exit
main ENDP
```

Task#3

```
INCLUDE Irvine32.inc
.data
space BYTE " ",0
prompt1 BYTE "10 unsigned Random Numbers from 0 to 4, 294, 967, 294",0dh, 0ah, 0
prompt2 BYTE "10 signed Random Numbers from -50 to +49",0dh, 0ah, 0
.code
main PROC
mov edx, offset prompt1
call writeString
mov edx, offset space
mov ecx, 10
L1:
mov eax, 5
call randomRange
call writeDec
call writeString
mov eax, 295
call randomRange
call writeDec
call writeString
mov eax, 968
call randomRange
call writeDec
call writeString
mov eax, 295
call randomRange
call writeDec
call crlf

Loop L1
call crlf
mov edx, offset prompt2
call writeString
```

```
mom edx, offset space
call crlf
mom ecx, lB
  L2:
mom eax, 99

call randomRange
sub eax, 50
call writeInt
call writestring
Loop L2
call crl{
call crl{
exit
main ENDP
  END main
```

Output

```
10 unsigned Random Numbers from 0 to 4, 294, 967, 294
4 217 639 72
2 240 538 188
3 184 36 172
3 71 1 102
1 164 526 122
2 163 454 108
0 43 797 135
1 22 447 112
2 77 46S 123
4 214 966 241

10 signed Random Numbers from -50 to +49

-13 +32 -29 +13 +41 -20 -25 +28 +48 -27

Press any key to continue . . .
```

Task#4

```
INCLUDE Irvine32.inc
.data
mySize=500
fileName BYTE "MyFile.txt",0
prompt BYTE "Enter a string:",0dh, 0ah

mystr BYTE mySize DUP(?)
stringLength DWORD ?
fileHandle Handle ?
.code
main PROC
mov edx, offset fileName
call CreateOutputFile
mov fileHandle, eax
mov edx, offset prompt
call writeString
mov ecx, mySize
mov edx, offset mystr
call Readstring
mov stringLength, eax
mov eax, fileHandle
mov edx, offset mystr
mov ecx, stringLength
call WriteToFile
call CloseFile

exit
main ENDP
END main
```

Output

```
Enter a string:
Pakistan v/s India
Press any key to continue . . .
```

File

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Source	10/24/2021 9:56 AM	Assembler Source	2KB

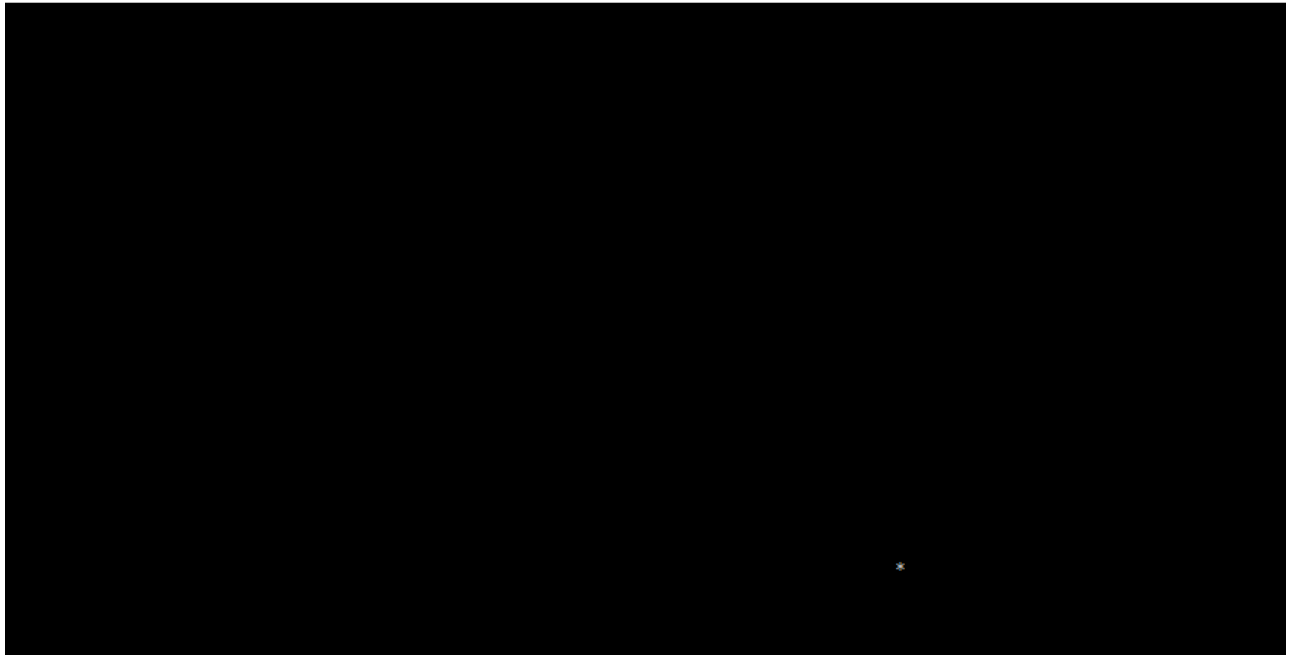IVIyFile - Notepad

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Pakistan v/s India)

Example#1

```
Include Irvine32.inc
.code
main proc
call Clrscr
mov dh, 24
mov dl, 79
call Gotoxy
mov al, '*'
call WriteChar
call ReadChar
mov dh, 10
mov dl, 10
call Gotoxy
call WriteChar
call CrLf
call DumpRegs
mov al, '&'
mov cx, 79
mov dh, 5 ; row 5
L1: mov dl, cl
call Gotoxy
call WriteChar
loop L1
call CrLf
exit
main ENDP
END main
```

Output

Example#2

```
Include Irvine32.inc
.data
myInt DWORD ?
myChar BYTE ?
myStr BYTE 30 dup(0)
myPrompt BYTE "Enter a string:",0
myPrompt2 BYTE "Enter a number:",0
.code
main proc
; Output 2 random numbers
call Randomize
call Random32
call WriteInt
call Crlf
call RandomRange
call WriteInt
call Crlf

mov edx, offset myprompt
call Writestring
mov ecx, 30
mov edx, offset myStr
call Readstring
call Writestring
 Call Crlf
mov edx, offset myprompt2
call Writestring
call ReadInt
call Crlf
call WriteInt
call Crlf
exit
main endp
```

Output

```
-1912506631
+427996522
Enter a string:my
my
Enter a number:2

+2
Press any key to continue . . .
```

Example#3

```
Include Irvine32.inc
.data
msg byte "Genrating 50 number",0
.code
main PROC
mov edx,offset msg
call WriteString
call crlf
mov ecx,50
L1:
mov eax,+33
call RandomRange
call writeDec
call Crlf
Loop L1
exit
main endp
end main
```

Output

```
Genrating 50 number
0
12
23
20
32
9
10
15
15
29
14
30
24
12
1
8
12
10
31
3
11
26
14
20
18
26
5
8
10
```

Example#4

```
INCLUDE Irvine32.inc
.data
var1 DWORD 5
var2 DWORD 6
.code
main PROC
call AddTwo
call writeint
call crlf
exit
main ENDP
AddTwo PROC
mov eax,var1
mov ebx,var2
add eax,var2
ret
AddTwo ENDP
END main
```

Output

```
+11
Press any key to continue . . .
```

Example#5

```
INCLUDE Irvine32.inc
.data
myarray DWORD 1,2,3,4,5,6
.code
main PROC
call ArraySum
call writeint
call crlf
exit
main ENDP
ArraySum PROC
mov esi,0
mov eax,0
mov ecx, LENGTHOF myarray
L1:
add eax,myarray[esi]
add esi,4
Loop L1
ret
ArraySum ENDP
END main
```

Output

```
+21
Press any key to continue . . .
```

Example#6

```
INCLUDE Irvine32.inc
BUFFER_SIZE = 501
.data
buffer BYTE BUFFER_SIZE DUP(?)
filename BYTE "output.txt",0
fileHandle HANDLE ?
stringLength DWORD ?
bytesWritten DWORD ?
str2 BYTE "Bytes written to file [output.txt]:",0
str3 BYTE "Enter up to 500 characters and press"
BYTE "[Enter]: ",0dh,0ah,0
.code
main PROC
; Create a new text file.
mov edx,OFFSET filename
call CreateOutputFile
mov fileHandle,eax
mov edx,OFFSET str3
call WriteString
mov ecx,BUFFER_SIZE
mov edx,OFFSET buffer
call ReadString
mov stringLength,eax ; counts chars entered
; Write the buffer to the output file.
mov eax,fileHandle
mov edx,OFFSET buffer
mov ecx,stringLength
call WriteToFile
mov bytesWritten,eax ; save return value
call CloseFile
; Display the return value.
mov edx,OFFSET str2 ; "Bytes written"
...............................
call WriteToFile
mov bytesWritten,eax ; save return value
call CloseFile
; Display the return value.
mov edx,OFFSET str2 ; "Bytes written"
call WriteString
mov eax,bytesWritten
call WriteDec
call Crlf
exit
main ENDP
END main
```

Output

```
Enter up to 500 characters and press[Enter]:
edhfsd
Bytes written to file [output.txt]:6
Press any key to continue . . .
```

Example#7

```
INCLUDE Irvine32.inc
INCLUDE macros.inc
BUFFER_SIZE = 5000
.data
buffer BYTE BUFFER_SIZE DUP(?)
filename BYTE 80 DUP(0)
fileHandle HANDLE ?
.code
main PROC
; Let user input a filename.
mWrite "Enter an input filename: "
mov edx,OFFSET filename
mov ecx,SIZEOF filename
call ReadString
; Open the file for input.
mov edx,OFFSET filename
call OpenInputFile
mov fileHandle,eax
; Read the file into a buffer.
mov edx,OFFSET buffer
mov ecx,BUFFER_SIZE
call ReadFromFile
mov buffer[eax],0 ; insert null terminator
mWrite "File size: "
call WriteDec ; display file size
call Crlf
; Display the buffer.
mWrite <"Buffer:",0dh,0ah,0dh,0ah>
mov edx,OFFSET buffer ; display the buffer.
call WriteString
call Crlf
mov eax,fileHandle
call CloseFile
exit
```

Output

```
Enter an input filename: output.txt
File size: 6
Buffer:
```